

NITRIFICATION AND DENITRIFICATION PROCESS

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Abstract

PURPOSE: To reduce power consumption for fluidization and to reduce stripping off of adhered microorganisms by treating filthy water contg. N compds. by a fluidized medium process by suspending vermiculite as a carrier for the microorganism in a reaction vessel.

CONSTITUTION: Filthy water is introduced through a feeding pipe 7 into a denitrification tank 1 where it is allowed to contact with vermiculite particles 4 contg. deposited microorganisms by the lifting effect of the air supplied from an air dispersing pipe 9, and aerated. Nitrified treated water overflows from a nitrifying tank 1 into a separating cylinder 11 in a separating section 5, and the vermiculite 4 is settled and returned to the nitrifying tank 1 from the bottom of the separating section 5. In a denitrifying tank 2, the vermiculite is fluidized in an anaerobic condition by a stirrer 13 and denitrification is performed. Methanol is supplied from a methanol tank 14 as a nutrient for the denitrifying bacteria. Denitrified water is aerated in a reaeration tank 3 by the air from an air dispersing pipe 19.

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